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ABSTRACT

This paper reports on the underlying rationale and some early findings of a series of studies which investigate how students perceive and interpret teacher behavior toward high and low achievers in elementary classroom settings. To explore students' perceptions a multi-method approach was devised and two measures were constructed: a semistructured interview schedule for examining student beliefs about achievement status and differences, and a 60-item teacher treatment inventory which allowed students to rate teacher treatment of a hypothetical high or low achiever of male or female sex. Preliminary findings of studies among the elementary school children suggest that students do perceive differential treatment by the teacher of male high and low achievers. In effect, different environments exist for high and low achievers within one classroom setting. Additionally, it appears that students read into teacher behavior much beyond what researchers commonly think they are measuring; perceived teacher treatment differences most often reflect differences in the task assignment and management arena of classroom life; and children learn about their own relative smartness in school through at least four kinds of processes. Among the implications discussed, it was noted that by not waiting for an answer to a question or by collecting incomplete assignments from students teachers can limit the opportunities for a student to perform and learn. (Author/RH)

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LEARNING ABOUT THE ACHIEVEMENT HIERARCHY OF THE CLASSROOM: THROUGH CHILDREN'S EYES

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This paper reports on the underlying rationale and some early findings of a series of studies now being conducted at the University of California at Berkeley. These studies were designed to learn more about how students perceive and interpret teacher behavior toward high and low achievers in elementary classroom settings. The ultimate goal of such investigations is to explore through children's eyes the impact of teacher communication of high and low expectations for academic performance upon a student's developing sense of academic competence, his or her self-expectations, and subsequent academic growth.

Recent reviewers of the research on the self-fulfilling prophecy in the classroom have sought to integrate the studies in terms of how much support each one gives to the underlying components of a dynamically linked causal process (Braun, 1976; West & Anderson, 1976). Explicated in Brophy and Good (1970) and expanded upon in Braun (1976), the causal sequence includes teacher input factors such as possible sources of teacher expectations and the differential susceptibility of teachers to input information, teacher output factors in the form of teacher behaviors which transmit expectancy cues, and finally, learner output factors which include learner responses to the expectancy cues, learner self-expectations and learner performance. Currently, at issue is the precise direction of causation (Crano & Mellon, 1978; Noble & Nolan, 1976; West & Anderson, 1976).

Much of the research presently available has explored teacher input and output factors as they impinge on one aspect of the learner--achievement. In the majority of classroom expectancy research, performance outcomes have been the only learner variables measured.

Therefore, before concluding our debate concerning the nature of the causal relationships, it becomes imperative to examine in depth the kinds of processes which may intervene between hypothesized differential teacher treatment and suppressed or enhanced gains in student achievement.

One assumption commonly held is that differential pupil achievement occurs in response to differential teacher treatment. That is, in responding, each child exhibits behavior which is consistent with the teacher's expectations. A child is thought to adopt a self-view in accordance with how significant others behave toward him or her. Thus, teacher cues about expected performance are hypothesized to affect a child's self-view, particularly the expectations a child holds about his or her capacity for academic performance. In turn, these self-expectations can come to influence a pupil's willingness to attend, to respond or to continue trying, all behaviors which are reflected in learner outcome on standardized achievement tests.

One way then, of conceptualizing the set of processes which may mediate between teacher feedback and student performance is to consider that the learner may or may not perceive, interpret, internalize, (into self-expectations) and act upon the information contained in teacher cues about expected achievement. The inclusion of the qualifier "may" suggests the existence of yet other variables which can influence both the course of this process and the relative contributions of teacher expectations and pupil expectations to the self-fulfilling prophecy.

For example, Braun (1976) suggests that the potency of teacher cues about expected performance depends on at least two factors; first, the credibility of the judge, and second, the self-image of the learner. Certainly, some of the teacher's credibility emanates from his/her

dominant role in classroom process, particularly in decision-making. In addition, fundamental aspects of the evaluation system utilized--a system which is dramatically unlike the ways in which children are judged prior to their entry into the school system--invest the teacher with great expertise while increasing the vulnerability of the learner. As Entwisle and Hayduk (1978) describe it, upon entering school (in sharp contrast to prior successes achieved on the basis of maturation alone), a child is evaluated on (1) new and different activities, with (2) a lack of real choice (thereby minimizing the child's control over success), (3) often on the basis of obscure criteria, (4) from multiple sources including peers, (5) according to others his/her age (rather than with respect to past record) and (6) with a scarcity of reward (e.g., only one child can be best when ranked with the rest of the class.) In addition, a single ability (usually reading) is most often assessed as the criterion for rewards, further limiting access to success. Given just these two facets of the teacher's role (its narrow evaluative thrust and its dominance over classroom process), it is highly likely that cues from the teacher which reflect evaluative information can be exceedingly potent input to students, particularly in the early grades, and at important transition points such as graduation to junior high school.

Second, each child yearly carries to the new classroom setting a self-image forged out of prior achievement experiences with other teachers and peers and with parents and siblings. Thus, self-image may mediate how potent the cues will be for the learner. As Braun (1976) proposes "If a child already views himself as a competent learner, it may require many cues from highly credible sources to change this image." Similarly, a confirmed negative self-image is difficult to change (Gillham, 1967). Thus, self-image may play a critical role

in the kind of response learners make to teacher cues about expected performance, as well as to their actual achievement.

In actuality, we know relatively little about each of these learner processes, as separate acts or as they relate to each other in dynamic interaction. The Entwisle and Hayduk study (1978) provides a first example of a focus on the internalization process and is aimed at building an understanding of the evolution of young children's expectations. This study explored the evolving relationship between children's expectations and teacher marks over first and second grades. Of interest, the researchers found that children (and even more so, working-class children) began school with very high expectations for their academic performance--expectations which far exceeded the first grade marks assigned. In the case of the working-class children, the discrepancy between self-expectations and actual marks was so great that one wonders how the teacher feedback was understood. In addition, and further complicating the student's interpretation of events, Entwisle and Hayduk observed enormous variance in marking practices between schools(related to social class), between first and second grades, and between daily teacher feedback and actual report cards. Not surprisingly, the findings concerning the relationships over time between marks and expectations are exceedingly complex.

Several other investigations provide some preliminary evidence about how students perceive teacher feedback. Boehm and White (1967) interviewed first through sixth graders about their perceptions of school marks. When asked "how do you know when you have done well or badly in school?" students responded overwhelmingly that report cards were the primary vehicle for such information. Yet when excerpts from the interview transcripts were examined, quite clearly students

acknowledged the differential meaning of grading by the teacher; for example, one student reported that "the meaning of an F depends on the kind of pupil one is."

In an experimental setting, Solomon and Yaeger (in a series of studies, e.g., 1969) investigated boys' perceptions of verbal reinforcers. The stimuli used had been tape-recorded by an actress and encompassed all combinations of three levels of content (positive, neutral and negative) and three levels of intonation (pleased, indifferent and displeased). The results suggested that content and intonation both singly and in interaction had significant effects on the perceived meaning of the reinforcers. Further, boys' intellectual achievement responsibility scores were significantly related to positiveness of perceptions, while their anxiety scores were related to their relative sensitivity to intonation.

Finally, Zahorik (1970) collected four pupil judgments about 28 segments of classroom dialogue. The questions asked of pupils concerned how the teacher's feedback made them feel and what information was provided about why an answer was right or wrong. While some feelings were provoked and some information provided, almost no explanation or direction was given to the student in the samples of teacher feedback studied. Of particular interest in Zahorik's study is the link-up between teacher feedback and student feeling, a pathway that can have important implications for the development of self-expectations.

One recent investigation of teacher structuring, soliciting and reacting behavior (Stayrook, Corno & Winne, in press) specifically looked at the role of student perceptions as an intervening variable which may mediate the effects of teaching behaviors on pupil achievement. Path analyses of the data revealed that student perceptions of

teacher structuring and reacting were more critical in influencing achievement than the observed teaching behaviors alone. Thus, student perceptions were found to mediate the effects of teacher behavior on achievement.

Hence, we do have some preliminary evidence that (1) teacher feedback has some informational value for students, (2) students can articulate the meaning of teacher behavior for them, (3) student perceptions of teacher behavior can mediate the effect of that behavior on performance, (4) individual differences can play a role in perceptions of feedback, and (5) students' initial expectations are at variance with their first grade marks. These findings underscore the feasibility of pursuing the links between teacher feedback and pupil performance. They also suggest the importance of beginning with a more systematic investigation of learner perceptions of teacher cues. Given the role of learner perceptions as a potential mediator between teacher feedback and pupil performance, and given our lack of knowledge concerning the meaning to students of, for example, an expectation-mark discrepancy, careful studies about what information is actually taken in by students about their achievement status in the classroom and how that information is understood in the context of building self-expectations about performance are necessary next steps in clarifying the relationship between teacher behavior and performance.

ISSUES CONSIDERED IN PLANNING THE RESEARCH

First, while the classroom expectancy literature has tested hypotheses concerning differential treatment by the teacher of high and low achievers and of male and female students, learner perceptions of differential interactions have not been assessed. What research exists on student perceptions of classroom environments (e.g., Walberg discussion, 1976) has focused on teacher-student or student-student processes in general and has relied solely on the classroom mean of student observations as the measure of perceived climate. This pooling of student observations may mask the possibility that different environments exist for high and low achievers wtihin one classroom setting and that these differences are perceived and agreed upon by the students.

Second, research attempts to document differential teacher treatment of high and low achievers have produced highly inconsistent findings (Brophy & Good, 1970, 1974; Weinstein, 1976). This literature is based on the observations of outside observers. Recent research suggests that the perspectives of student and of observer concerning the nature and meaning of classroom events may well differ. For example, Clark and Cresswell,1978 , report that students perceive the nonverbal behavior of the teacher to be more encouraging of learners than do classroom observers. While this difference may reflect the historical totality of student experience with the teacher, the fact that students are influenced by the total picture and the possibility that they may be attending to a different set of behavioral cues must be considered when examining the dynamics of the expectancy hypothesis.

Third, there is little in the classroom expectancy research abut individual differences in the learner which might mediate his/her susceptibility to teacher feedback. Research on the perceptual process,

in general, and student perceptions, in particular, suggest that perceptions of others appear to be jointly determined by the perceived and by the person who is the object of his/her attention. Thus, perceptions are not entirely accurate representations of the environment and intra-individual factors often play a role in what is perceived. A variety of individual or group difference variables have been explored (reviewed in Jones, 1977). Of particular interest to the task of understanding learner perceptions of classroom process, variables such as sex (e.g., Davidson & Lang, 1960), self-concept (e.g., Ames, Ames & Felker, 1977), level of anxiety (e.g., Feldhusen & Denny, 1965), SES and race (Denny & Weintraub, 1966), and ability (Bledsoe, Brown & Strickland, 1971) have been found to influence learner perceptions across a variety of tasks and situations.

Fourth, varied classroom environments have not been considered in the exploration of the expectancy hypothesis. There exists a growing body of research concerned with what students perceive and how they perform in different classroom settings. Aspects of the classroom environment such as course content (e.g. Anderson, 1971), competitive versus non-competitive structures (e.g., Ames, Ames & Felker, 1977), teacher type (e.g., Halperin, 1976), and open versus self-contained practices (Gauvain, Roper & Nolan, 1977) have all been shown to affect student perceptions of the learning environment and/or of the self. For example, when open-plan classrooms are compared to more traditional classrooms, students in the open settings report positive attitudes toward school, teachers and self, and perceive that they have more autonomy than students in either traditional or mixed schools (Weiss, 1973).

While evaluative research about"open education" has shown mixed

results overall, there exist important differences between open and traditional (or self-contained) settings which have implications for teacher expectations and learner perceptions. In open-plan classrooms, teacher dominance over classroom process is reduced and students tend to play a larger role in decision-making. Further, both nature and the context of evaluation are different. Evaluation in open-plan settings is often based on a broader set of criteria over multiple activities, progress is often individualized rather than reviewed relative to other classmates, and both the giving of teacher feedback as well as pupils' actual task completion rates tend to be more private events. Thus, the potency of teacher cues may be lessened and/or teacher cues about expected performance in open-plan settings may actually differ.

In sum, the interrelating of theory/findings from the separate literatures on expectations and on learner perceptions suggests a specific starting point for the research as well as specific features to keep in mind for the design.

(1) The most important consideration is the need for a multi-method approach. First, classroom observer studies of differential teacher treatment provide the actual teaching behaviors hypothesized to serve as teacher cues about expected performance. Thus, one thrust of this investigation is to assess learner perceptions about "hypothesized" differential teacher treatment. This would involve developing an inventory of predetermined teacher behavior items. Second, studies of observer-student agreement and of the development of children's social cognition stress the importance of an exploration of a learner's own view of reality without pre-set categories to inhibit response. Therefore, open-ended semi-structured interviews (with a subset of

students are included in the design in order to probe in yet another way for perceptions of differential treatment and for the interpretations made.

(2) Given, a some evidence for the existence of different classroom environments (i.e., differential teacher behavior) for high and low achievers within one classroom setting and b some evidence for the impact of learner characteristics on perceptions of teacher behavior, it is important to study the interplay of both learner agreement and disagreement about perceptions of classroom events. Methodologies which focus on learner report of teacher treatment toward self or treatment in general (e.g., classroom climate scales) cannot easily sort out an ability explanation from an actual environmental difference explanation when faced with different perceptions from, for example, high and low achievers. A methodology which targets the type of student for which an environmental description is desired (e.g., a low ability child) can look for both agreements and disagreements in perception. Although the argument can be made that some times students do not have access to each other's activities and experiences, given the public nature of classroom life, it is likely that students are aware of some aspects of what life is like for different groups of students.

(3) Given documented teacher treatment differences related to both the ability and the sex of the student (Brophy & Good, 1974), it is of interest to replicate the design of those studies by focusing on student perceptions of four target student groups--high ability males, low ability males, high ability females and low ability females.

(4) Given that in observer studies of differential teacher treatment observers were not aware of the specific comparisons being made between different types of students, it is important to build-in an independent

assessment by learners of the teacher treatment of the different achiever types. Pilot testing of the measures also suggested that an independent assessment (rating the teacher treatment of only one type of student) was preferable to repeated testing in that it avoided stereotypic responses. During pilot testing of the inventory, students who had received two forms actively checked back to their previous responses in order to choose the opposite answer for the second form.

(5) While the expectancy literature as such has not investigated the influence of classroom context factors on the processes and outcomes hypothesized to occur, given the growing interest in the differences between open-plan and self-contained classrooms, it is important to examine student perceptions of differential teacher treatment in relationship to the classroom organizational structure adopted.

(6) Finally, given an interest in the relationship between perceived differential treatment and the development of learner self-expectations, it is important to explore in open-ended ways learners' constructs of the ways in which they become aware of their relative smartness in school. One goal is to begin to relate perceptions of others to perceptions of self.

MEASURES DEVELOPED

Two types of instruments were developed for the research and revisions of these measures ares still ongoing. First, a semi-structured interview schedule was constructed which examined student beliefs concerning (1) smartness, (2) how achievement status is learned in the classroom setting, (3) whether achievement differences are reflected in behavioral differences, (4) whether teacher and peers

treat "smart" and "less smart" pupils differently, and (5) how the students themselves would help children who have trouble learning. Clinical probes were used in ways to give the student the widest possible latitude to share what he or she knows. Cowan (1978) describes Piaget's clinical method as a series of systematic questions and interventions that are continually reworded and reworked in order to come closer to the child's construction of reality. In this case, systematic questions were built-in and the interviewers were taught when and how to probe for more information.

Second, a 60 item teacher treatment inventory was developed to be rated by students as descriptive of the treatment of a hypothetical high or low achiever of male or female sex. Items from the teacher treatment inventory were generated from a review of the literature as well as from student interviews. The following areas of research were surveyed: studies of the relationship between teaching behaviors and student achievement (Rsenshine & Furst, 1973, Rosenshine, 1976), studies concerned with how teacher expectations are expressed in behavior (Brophy & Good, 1974), and studies of student perceived classroom environments (Anderson & Walberg, 1974, Trickett & Moos, 1973). In addition, the interview protocol was used as a second source for obtaining differential teacher behavior items. In combination, the literature review and the interview data provided a wide range of teaching behaviors which had been either hypothesized or demonstrated to be related to student gains in achievement or to the differential treatment of high and low achievers. Broadly grouped, the teacher behaviors represented in the inventory concerned kinds of <u>teacher support</u> (e.g., the teacher goes out of her way to help <u>X</u> (the hypothetical student), <u>teacher attention</u> (e.g., the teacher calls on <u>X</u> to answer questions), <u>teacher expectations</u>

(e.g., X is not expected to follow the rules), teacher feedback (e.g., the teacher scolds X for not paying attention), teacher questions (the teacher asks X easy questions), variability of activities (e.g., the teacher uses different kinds of materials and activities in her lessons with X), task orientation (e.g., X is expected to stick to his classwork), and teacher vs. student direction (e.g., the teacher asks X to suggest or direct activties.

The teacher behavior items are administered to the students in one of four forms. Each student is presented with a one paragraph description of a hypothetical pupil who is either a high achiever or a low achiever and either male or female. After reading the description of the hypothetical pupil, the student is asked to rate each of the teacher behavior items in terms of how much it describes the way in which his/her teacher works with the hypothetical student.

RESEARCH DESIGN

Phase I of the research was concerned primarily with the initial pilot testing of the newly developed instruments. In a first study, interviews were conducted with 45 first through sixth graders using the interview schedule described previously. Participants were obtained through their parents rather than schools and represented a network of acquaintances of the six trained interviewers. The interview data were first used to generate some of the specific items for the teacher treatment inventory. In addition, student responses to the more open-ended questions proved useful in clarifying the interpretation of student-perceived teacher treatment differences on the inventory measure. A preliminary analysis of the patterns inherent

in student responses also generated some useful hypotheses for future study.

In a second study, using a separate sample of students enrolled in summer enrichment classes in math and/or computer science at a university facility, pilot-testing of the teacher treatment inventory was undertaken.

In this study, perceived teacher treatment of high and low male achievers was assessed. Male stimulus children were chosen as a first focus because of boys' greater salience in classroom interaction (Brophy & Good, 1974) which might maximize the chances of finding perceived differences in teacher treatment. Again, students from grades one through six were sampled and in all 102 boys and girls rated (1) teacher behavior toward a hypothetical male high or low achiever (teacher treatment inventory), (2) the characteristics of their hypothetical classmate on seven adjectives, and (3) their own academic competence on a scale of 1 (top of the class) to 30 (bottom of the class) (Nicholls' self-concept of attainment scale, 1976).

The findings from these studies led to revisions in the interview schedule and in the teacher treatment inventory. Phase II of the project is now underway. These studies focus on a fourth grade population and extend the assessment of student perceptions of teacher interactions to include the treatment of four hypothetical types of pupils - both male and female high and low achievers. The effects of three student perceiver variables (sex, ability and self-concept) and one classroom structural variable (open vs. self-contained) on perceived differential teacher treatment are also being investigated. In

addition, a subset of students representing both male and female high and low achievers from open and traditional classrooms will be interviewed. The interviews will be taped and transcribed in order to allow more extensive content analysis of the students' construction of the classroom reality.

PRELIMINARY FINDINGS

The initial findings based on both the teacher treatment inventory and the interviews suggest that students do perceive differential treatment by the teacher of high and low achievers. While a complete report of the male achiever treatment study will be forthcoming (See Weinstein & Middlestadt, in press), several of the major findings will be reviewed here.

Students did perceive the high achieving males to be more popular, friendly, competitive, attentive, independent and successful but not more powerful than the low achieving males. These perceptions of the differing attributes of male high and low achievers were largely shared by students of both sexes, of high and low self-concept of attainment, and across grades. The fact that students did perceive differences between male high and low achievers in academic qualities such as being "attentive" or "successful" does provide evidence that students responded to the instructional set when filling out the teacher treatment items (i.e., high or low achiever form). However, students also perceived differences between male highs and lows that went beyond the academic, extending into the social realm of popularity and friendship.

Students also perceived differential treatment across one quarter of the 60 teacher behaviors studied. As an example of the differential treatment documented, 76.1% of low achiever ratings compared to 30.9% of high achiever ratings described the student as being closely watched by the teacher.

For some of these teacher behaviors (i.e., the teacher helps, asks others to help, grants privileges, permits students to direct activities, to make up projects and to do as he likes, is concerned that he learn something and doesn't explain the rules), perceptions of differential treatment appeared across grade levels and were shared by pupils of both sexes and of both high and low academic self-concepts. For other teacher behaviors, while differential treatment was perceived overall, interactions with perceiver characteristics qualified these differences.

In addition, for more than one third of the remaining teacher behaviors, while no overall idfference in teacher treatment was perceived, differences among subgroups of students in their perceptions of the teacher treatment of male high and low achievers did occur. The sheer number of significant interactions and the amount of variance accounted for relative to that for high or low achiever form, suggest that beyond a set of shared perceptions of differential teacher treatment, individual differences in the perceiver as well as grade level do affect perceptions.

Finally, principal exploratory components analyses of the differentiating items revealed that student-perceived teacher treatment of male highs reflected high expectations, academic demand and special

privileges. Male lows were viewed as receiving fewer chances, yet greater teacher concern and vigilance. Given the focus of this first study on teacher treatment of male achievers only and as assessed within a sample of predominantly high achievers, closure on the precise nature of perceived differential teacher treatment awaits the results of the larger ongoing investigation.

Of interest, the pilot student interviews both parallel and extend the findings obtained using the teacher treatment inventory. An examination of student responses across a number of questions reveals that students are aware of differential treatment by the teacher of high and low achievers. As noted earlier, several of their responses were translated into items for the teacher treatment inventory. Yet an analysis of patterns in their responses provides another and quite different vantage point for understanding the structure of differential teacher treatment.

Several speculations can at this point be shared:

(1) Students read into teacher behavior much beyond what researchers commonly think they are measuring. For example, in the teacher treatment inventory the behavior "call on" was included as an example of teacher attention. This behavior was not perceived by students as differentially accorded high and low achievers. Not surprisingly, their open-ended responses to the interview questions revealed at least four varieties of "call on". For example, the teacher "calls on the smart kids for the right answer...She expects you to know more and won't tell answers". Whereas, with regard to the low achievers, the teacher calls on them sometimes "to give them

a chance" or " because they goof of.". Or she often "doesn't call on them because she knows they don't know the answer". Students appear to differentiate between instances of "calling on" behavior in complex ways. How they infer this, either from additional verbal and non-verbal cues from the teacher , or from the behavior of the learner or from the application of stereotyped expectations remains a question for further study. But the differentiated perceptions they shared about the behavior can explain why measuring sheer frequency of "calls on" might cancel out differences between the treatment of high and low achievers.

(2) Perceived teacher treatment differences most often reflect differences in the task assignment and management arena of classroom life. While students do mention the differential use of praise and encouragement with high and low achievers (favoring the highs) most of their comments revolve around the differential allocation and management of classroom tasks or activities. Of interest, seven aspects of the activity structure emerge as differentiating the teacher treatment of highs and lows. These include (a) choice over task involvement, (b) choice of particular task, (c) level of task difficulty, (d) pattern of pupil task assignment, (e) time allocated for task completion, (f) imposition of task structure and (g) rate of progress.

Students describe high achievers as having a great deal of choice over their participation, overall or in specific activities. For example, "they can read any book they want" or "if someone doesn't want to read, the teacher doesn't make them". They are seen as receiving harder, and more special assignments, reserved for only a select

few students. More time is allocated for task completion. One student reported that "the teacher doesn't require them to get things done by an exact time". Another student remembered that the teacher gave one smart person two days to draw a picture when everyone else had only one day and then the teacher chose the smart person's drawing for display. Less structure and less supervision are imposed on the activities of high achievers. For example, the teacher "lets them sit at the back of the room for reading group" or as another student described it "the teacher lets us on our own more ...doesn't look at us to see if we are cheating -- actually we cheat more". Finally, high achievers are also allowed to go at faster rates in covering the materials because "the teacher thinks we can do things".

Whereas, low achievers are perceived as having little choice about their task involvement. "The teacher makes them read because they need it". Or "they can't choose what they read". Low achievers are given easier assignments and the more ordinary ones, along with other slower learners. They are given less time to complete the activity with the teacher spending more time following their progress closely. For example, "the teacher helps them more... helps them a lot means they are not so smart", or "the teacher calls on them more because they goof off." One student described it as follows: "If they don't do the work, she gets mad - she won't get mad at a smart kid". Finally, low achievers are perceived as being given less work and as moving at slower rates.

(3) Children learn about their own relative smartness in school through at least four kinds of processes. These include (a) grades/report cards, (b) teacher feedback, such as comments written on papers

or said aloud, e.g. "keep it up" or "really good", (c) comparative ranking with peers, and (d) internal indices of accomplishment. The first two sets of marker events are relatively straightforward. It is the last two categories of processes that in part explain students' awareness of potentially differential grading practices, such as what the student in the Boehm and White study (1967) alluded to as, e.g., "the meaning of an F depends on the kind of pupil one is." In comparing themselves with peers, students report that they infer their level of competence from the fact that they get their work done during the time assigned, or from the time it takes them to finish, (e.g. "if it takes time to do it and I don't get it - I'm not smart"), or from the privileges assigned, or from the level of work given, (e.g. "if work is real easy and I get wrong answers - I'm not smart"), or from the number of right answers obtained relative to others. The students describe ample daily opportunities where relative performance can be compared and it is in the assignment and management of activities by the teacher that these cues are particularly visible. Those students who ascertain their level of academic attainment from internal indices describe the process in the following ways: "I judge myself - I go by my own indications", or "I just know"; or "I worked harder"; or "I understood it better"; or "I get a funny feeling".

One can speculate that students may vary in their reliance on internal versus environmental cues about academic performance. Some children, when asked how they learned whether or not they were smart in school, are apt to stress "the teacher just tells me" whereas others somehow feel it on their own.

These differences may in part be a function of development (our sampling for the interview data did not allow for a systematic comparison) and/or may reflect emerging individual differences in style. Of interest, Harter's newly developed measure of Intrinsic versus Extrinsic Motivational Orientation contains a subscale concerned with assessing a child's use of internal versus external criteria for measuring success or failure. Harter defines it as "the knowledge that one is learning because one has figured something out versus the reliance on marks or grades to determine one has successfully mastered the material." (p. 3).

(4) Perceived differences between high and low achievers loom large in students' eyes despite the fact that students acknowledge the teacher is more tolerant of the high achiever's behavior and gives him or her more leeway and autonomy for action. Whereas, on the other hand, in the treatment of low achievers, students perceive the teacher as "automatically blaming kids that get into trouble the most". Perceived differences run the gamut from physical appearance to academic behavior to attitude and personality and to friendship patterns. "Smart kids have bright eyes" and "you can tell who is smart by the look on their face." Whereas "not so smart" kids have buck teeth, don't dress right and are clumsy. Smart kids have a big vocabulary, raise their hand a lot, are less likely to copy, do their homework, obey the teacher and the rules, and try to get to know the teacher. They are also less likely to fight. But they are a little more naughty since the teacher is not so strict with deadlines. "Not so smart" kids are weird, act funny, and are good in art and sports. They don't do their homework and

play around "always playing ball or doing art." Smart kids stick together and smart kids feel sorry for dumber kids. But smart kids can be mean to others by not allowing certain kids to play. "They can be hot shots and show off."

IMPLICATIONS

While the preliminary findings of these studies must be replicated and extended in order to firmly address some of the questions raised in the early part of this paper, several points can be made about the directions and trends documented.

First, the content of differential teacher treatment as perceived by students reveals both similarities and differences in viewpoint between student and classroom observer or researcher. For example, on one hand, the student view is assessed using the teacher treatment inventory supports Rowe's (1969) findings that teachers provide a shorter wait-time following questions for low achievers than for high achievers. On the other hand, teacher help (going out of the way to help, asking others to help) when expressed to individual students rather than to the class as a whole, appears to be differentially accorded the low achieving male, and to express over-concern rather than teacher support as measured by, for example, the Classroom Environment Scale (Trickett and Moos, 1973).

Second, it is also important to note that several of the teacher behaviors which students perceived as differentially accorded male high and low achievers have been found in other studies to show strong relationships to academic achievement. The frequent use of factual, single answer

questions has been demonstrated to correlate positively with student achievement in mathematics and reading (Soar, 1973; Stallings & Kaskowitz, 1974). Time spent on non-academic activities or on student personal concerns (such as the discussion of outside student activities) has shown negative correlations with achievement (Stallings & Kaskowitz, 1974). Further, two of the teacher behaviors studied here, wait-time and the collection of incomplete assignments, have direct and immediate implications for the amount of material covered or practiced by the student. By not waiting for an answer or for a completed task, teachers can limit the opportunities for a student to perform and learning can be aborted. One student described the need for a teacher to wait as follows:

> Children have to have their chance -- they need the chance to show themselves out... Let them (the children) wait for a while. Let them think for a while.

The little research that has been conducted using amount of content covered as an instructional variable has found correlations with achievement to be both positive and larger than those obtained for any of the observed teacher behavior variables (Rosenshine, 1968; Armento, 1975).

Third, if, as one can speculate from a preliminary look at the interview data, a large part of the expectancy cues emerge in the implementation of the classroom activity structure, this suggests that the different activity structures of open plan and self-contained classroom structures might have an enormous effect on the availability of peer comparison cues to students. In addition, this finding also links the communication of teacher expectancy cues to a structural dimension of classroom life, rather than as an expression of more discrete idiosyncratic behavior.

Further, one can expect that students may vary in their use of these cues, with some relying more heavily on internal criteria for their success or failure rather than the cues inherent in external environmental events.

Finally, the student interviews highlight the critical role that peers play in the expectancy process (Cohen & Roper, 1972). Teacher behavior toward individual students can be seen as providing information about achievement status to the student as well as to peers. On the basis of the behavior's (1) implicit or explicit content, (2) its pattern of usage, i.e., timing, frequency, and chosen student target, and (3) its functional consequence or outcome, students learn much about the achievement hierarchy of the classroom. In some cases, the information appears to be perceived similarly by students; in other cases, individual differences of the perceiver color the perceptions. Nevertheless, to the extent that differential teacher treatment is perceived by students or by groups of students, it becomes a public event in classroom life. Not only can students articulate the daily comparisons that they make between their own and their peers' performance but they know precisely where they stand. Here, Nicholls' (1976) "self-concept of attainment" instrument provides some interesting insights into children's knowledge of how they fit into the achievement hierarchy of their classroom. Not only can children report the actual position from 1 (top of the class) to 30 (bottom of the class) that describes their own performance in class but in saying "I'm about here", they appear able to name those who fall above or below as for example, "There's Anne, Jenny, ah, let's see, Karen, Carol and Deborah, so I'd be about here".

How these rankings made by the children match the ratings of their teachers remains a matter of empirical study. But this knowledge may, in itself constrain or facilitate future performance. And not only is precise achievement status known but large behavioral differences are perceived and "potentially expected" between the high and low achievers. This possibility of influence is particularly sobering in light of the relativity of these rankings which depend, in large part, upon the ability mix of classrooms.

In sum, there is much to unravel in explaining the events which may mediate between differential teacher treatment and student performance. But one overreaching task is clear. In explicating the dynamics of the self-fulfilling prophecy in educational settings, the relative contributions of teacher, classroom context, student and peers toward the development of learner self-expectations for academic performance need to be interrelated.

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